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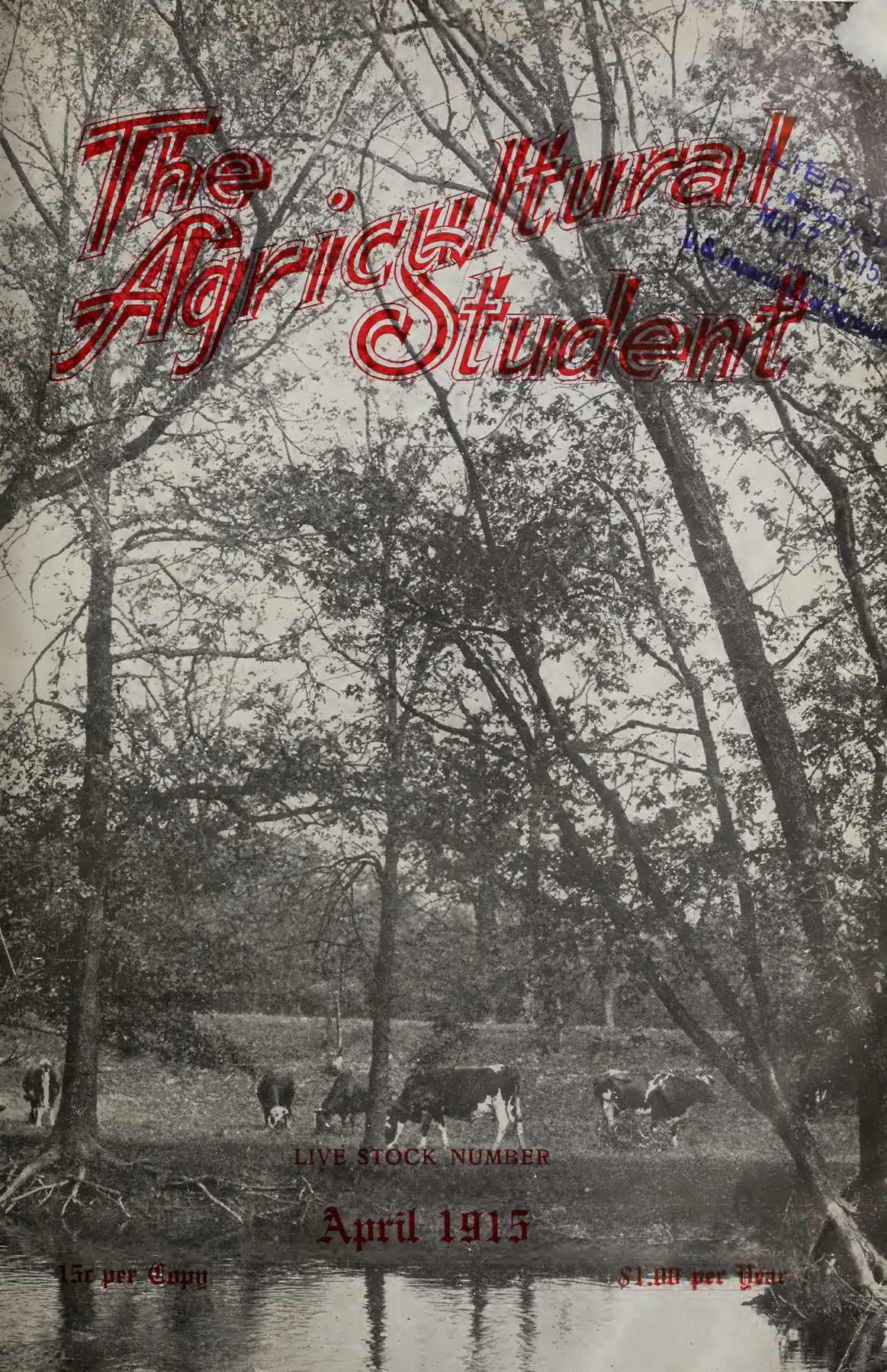

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April 1915

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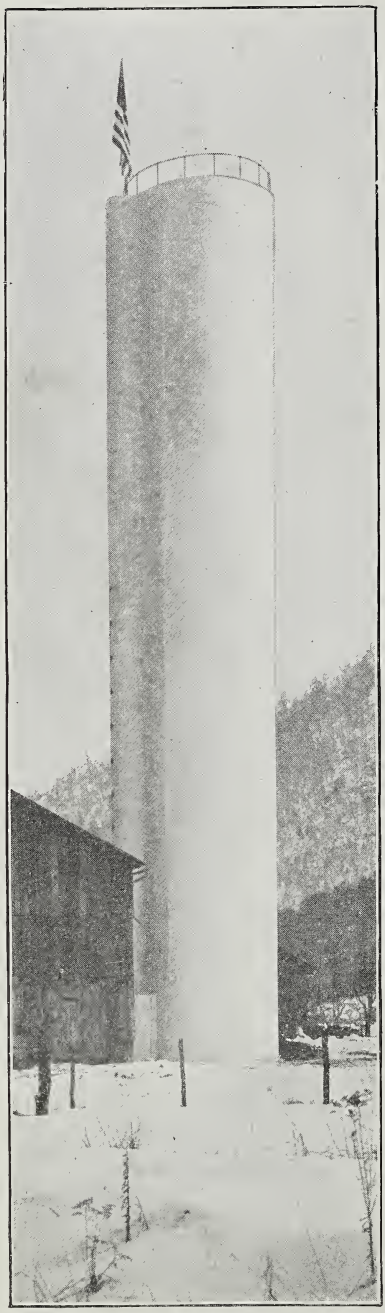

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Table of Contents

PERCHERON STALLIONS OWNED BY DUNHAMS, WAYNE, ILLINOIS.

THE
AGRICULTURAL STUDENT

Vol. XXI. OHIO STATE UNIVERSITY, COLUMBUS, APRIL, 1915 *No. 8*

THE OPPORTUNITY FOR THE BREEDER OF PURE BRED DAIRY CATTLE

C. H. ECKLES
Professor of Dairy Husbandry, University of Missouri

ALL who understand the history of the development of agriculture in other parts of the world recognize that the dairy cow must in the future be even a more important factor than she has been in the past in the agriculture of the Mississippi Valley.

The tendency in this direction is easily recognized at the present time. Within the last few years the demand for dairy cattle has increased more and has remained stronger than has the demand for any other class of stock. Not only is the demand for this class of animals growing, but there is a great shortage taking the country over at the present time. The census figures show the number of dairy cows per 1000 inhabitants is less today than it was ten years ago, and at that time the figures showed a decline from the ten years preceding. In other words, the increase in population taking the country as a whole has been greater than the increase in the number of cows producing milk.

The demand for the well bred cattle of the dairy breeds in the Mississippi Valley states has been greater than the supply for the last five years. Wherever there is a sufficient number together today to make a carload of good grade dairy cattle of any of the leading breeds, making it worth while for a buyer to come some little distance, there is no trouble in finding a buyer who will be glad to pay from $75 to to $125 per head.

It has been reported to me by a man in a position to know that within 12 months' time $15,000 worth of Holstein cattle have been shipped out of Cameron, Mississippi. Within the past two years Mr Gordon of Columbia, Missouri, has sold 95 head of high grade Holstein cows, the surplus of his herd, at an average of a little over $100 per head. It is reported that over $100,000 worth of dairy cattle were shipped out of a single town in Wisconsin last year. The writer receives an average of two letters every day asking where dairy cattle may be bought.

These scattering figures indicate the great demand for cattle of this breeding at the present time and call attention to the possibility of raising and selling cows for dairy purposes as an important part of the farm income.

While these prices and this demand will undoubtedly fluctuate more or less in the future we have no grounds from which to expect that there will be any serious decline in the years to come. A considerable part of the milk produced for market comes from herds where no young stock is raised. Although this is a bad practice and is unfortunate, yet at the same time it should be taken into account as one of the factors that operates to keep up the price of dairy cows.

The object of this article is to point out the opportunities in the way of breeding pure bred cattle. The reason for presenting the facts given so far is that without a good demand for grade cattle there can be no good demand for pure bred cattle. The breeder of pure bred cattle bears the same relation to the dairy industry that the breeder of pure seed corn does to corn growing.

tle when he goes to purchase is asked perhaps from $100 to $200 for a well bred animal of good ancestry. This looks to him like an extravagant price and he reasons to himself that he might as well buy some registered cows and raise a few animals of this kind himself. The mistake he makes, however, is assuming that he will be able to sell his pure bred calves readily for a price

AT THE PASTURE BARS, HOOD FARM, LOWELL, MASS.
—Courtesy American Jersey Cattle Club.

Who Should Breed Pure Bred Cattle?

The great mass of cattle that supply the market with dairy products is and should continue to be, grade rather than pure bred. It is not everyone who is situated to undertake the breeding of pure bred cattle and it would be a mistake to over-emphasize this line of farming. In fact it is more often necessary to warn beginners against spending too much money and expecting too much from pure bred cattle than it is to urge them to take up this line.

The farmer or owner of grade cat-

equal to that realized by the breeder from whom he buys his stock.

Disappointment often follows from the fact that a man without any reputation and without any experience finds a very limited market for his young stock, especially the males, and if he sells them at all it is at a figure so low that there is little in it to encourage him.

The fact that an animal has registration papers does not necessarily make it any more valuable, nor does it insure any more milk than from a good grade.

In the case with an inferior animal it may not add a single dollar to its selling price. However, if the animal be one of merit the fact that it is registered does add materially to its value, and especially to the value of its offspring to be used for breeding purposes. Pure bred registered dairy cows will sell for $50 to $100 more than grade animals if they are good milk producers and well bred. Ordinarily inferior registered animals rightly command no higher price than a grade.

JERSEYS AT GREGORY FARM, WHITE HALL, ILL.
—Courtesy American Jersey Cattle Club.

Learning the Pure Bred Business.

A beginner in the pure bred livestock business has a good many things to learn. He should first of all realize that it takes a period of years to build up a reputation that will enable him to sell his stock to advantage. When breeding pure bred dairy cattle the sale of dairy products should be counted upon to pay the running expenses and then when the herd is so far developed and the reputation of the breeder sufficiently established so that it is possible to sell breeding stock to advantage, the income from the breeding stock is additional profit.

A beginner in the pure bred livestock business should understand that first of all he must have a good herd, and next he must bring it to the attention of the people. There are various ways of doing this. Some find it advisable to exhibit their stock at their local fairs and at the state fair. Others do not exhibit but depend upon advertising in agricultural papers. Still another, and the best method of all, for the young breeder to follow in making a reputation is to keep milk and butter records and carry on official tests, then keep the public informed as to what he is doing along this line by using the advertising columns of the agricultural press.

A breeder with unlimited capital can attract attention to himself and his herd by the purchase of a bull costing

up into the thousands or a famous cow at a long price. The small breeder with limited capital should not undertake to imitate this type of speculation, neither should he count too much on selling his stock by reflected glory in the way of having an animal at the head of his herd that is a descendant of a high priced animal owned by someone else.

The main opportunity for the beginner with pure bred cattle in bringing his herd before the public is by making official yearly records of his cows and in this respect he has an equal advantage with the millionaire breeder who breeds cattle for recreation and not as a business. There is plenty of room in the Mississippi Valley, and will be in the next twenty-five years, for many herds of high class pure bred cattle. It will take probably ten years for a breeder to thoroughly establish himself. If he goes at it in the right way by keeping the best stock he is able to get, keeping records of production all the time and eliminating the poor animals; he will soon have a herd of merit, and will gradually build a reputation as a breeder that will last his lifetime.

It need not be an expensive matter financially to develop such a herd as they should be made to pay their way and more too in the sale of dairy products. The owner should not expect to build up a great reputation within one year or within five years but should at the same time understand that he must gradually bring his herd first of all to a position where it deserves to be well known and then he must see that it is brought to the atention of the people of the state.

The development of the Holstein herd at the University of Missouri shows how rapidly a herd may be increased. In 1902 the writer bought four Holstein heifers for less than $600. One of them proved to be inferior and was sold after having one bull calf leaving only three cows. At the end of thirteen years without buying another female, we have 36 females in our herd and we have sold 15. The total sales of breeding stock has amounted to $6,675 cash.

PURE BREDS—THE BASIS OF THE MOST SUCCESSFUL DAIRY FARMING.
—Courtesy "The Field Illustrated."

BUILDING UP THE DAIRY HERD

W. J. FRASER
Professor of Dairying, University of Illinois

GOOD dairying is one of the most remunerative lines of farming, and because of this fact even poor, unbusiness-like dairying may result in some gain. As a rule the average or even the best dairymen, neither know nor suspect the extent to which the profit or loss from each cow affects the profit received from the whole herd, because the profit on the good cows covers up the loss on the poor ones. If the largest returns are ever to be obtained, it is necessary to weed out the unprofitable cows from the dairy herd. The cow census of Hoard's Dairyman has shown clearly that many herds in different sections of the United States are kept at an actual loss.

A dairyman considers his market to be the place where he disposes of his milk, cream or butter, and in one sense this is true but the place where he markets much of the produce of his farm, such as grain, hay, and silage, is the dairy cow. The efficiency of the cow consuming these products, therefore, directly influences the dairyman's profits. If one of two neighboring grain elevators paid one-half cent more a bushel for grain than the other, no farmer would be foolish enough to sell his grain to the one paying the lower price. Yet dairymen persist in keeping cows year after year that are paying only twenty-five cents a bushel for grain, while other cows in the same herd, or that could easily be obtained at a reasonable price, are paying fifty cents a bushel or even more for the grain they consume.

A careful record was kept of all feed consumed and all milk and butterfat produced by the best and the poorest cow in each of six dairy herds in Illinois. The records of the ten cows for an exact year, together with the cost of milk and butterfat produced by the different cows at the market price for feed, is given below.

BEST AND POOREST COWS IN FIVE HERDS.

Cow No.	Milk, Pounds	Fat, Pounds	Cost per 100 Pounds Milk	Cost per 1 Pound Fat
83	11,794	382.4	$0 61	$0 19
84	8,157	324.0	87	21
85	9,592	406.3	75	18
86	3,098	119.2	1.65	40
93	9,473	358.6	76	20
94	7,846	282.1	87	21
95	14,841	469.0	56	18
96	7,686	324.1	80	22
97	8,563	291.0	78	23
98	1,411	52.8	2.77	74

The records separated by the horizontal lines are of cows from the same herd. The amounts of milk and fat and their costs show a decided difference in the earning capacity of the cows. The best cow produced over ten times as much milk as the poorest, and

produced it at 56 cents per 100 pounds in marked contrast to the $2.77 required by the poorest cow to produce the same amount.

From the testing of over 4000 cows in the dairy herds of Illinois, it has been proved that this great difference in cows extends to practically every herd in the state.

Have a Profitable Standard.

The profitless cow is a large, living issue in dairying for bread and butter. One of the most important yet easiest steps for improvement in the dairy business today is the discovering and weeding out of poor cows. Some herds do not pay for the feed given; others pay too small a profit to justify the investment in money and labor; and still others make their owners big money. These differences rest on causes that may be readily understood, and to change from the poor to highly profitable herd is a comparatively easy matter, within the reach of any farmer able to keep cows at all.

Generally speaking, no dairyman can afford to keep a cow that does not average 224 pounds of butterfat per year, and this standard might profitably be raised each year, for it requires less energy to weed out the poor cows than it does to continue to milk them.

Whole Herd Brought Up to 307 Pounds of Butterfat Per Cow by Testing and Weeding out Poor Cows.

To illustrate results of such weeding out, the three years' record of a tested herd are given below in detail:

Cow No.	1904			1905			1906		
	Milk, Pounds.	Fat, Per Cent.	Fat, Pounds.	Milk, Pounds.	Fat, Per Cent.	Fat, Pounds.	Milk, Pounds.	Fat, Per Cent.	Fat, Pounds.
1	5,970	4.55	272	.....	.....	.....	.....	.....	.....
2	8,579	3.19	274	8,062	3.2	262	10,201	3.55	363
3	4,818	4.27	206	.....	.....	.....	.....	.....	.....
4	3,212	4.70	151	6,663	3.9	258	6,895	3.88	269
5	6,360	3.72	237	6,196	3.5	218	.....	.....	.....
6	9,802	3.94	386	8,607	3.9	339	7,674	4.83	371
7	4,701	3.67	176	.....	.....	.....	.....	.....	.....
8	6,992	3.41	239	.....	.....	.....	.....	.....	.....
9	4,408	3.79	167	6,442	3.4	220	9,367	3.60	338
10	5,368	4.05	218	6,634	3.6	236	8,313	3.55	296
11	4,498	4.35	196	7,819	4.0	316	5,943	4.22	251
12	6,823	3.71	254	5,834	4.2	244	8,202	3.83	314
13	3,773	4.47	167	4,356	4.2	182	.....	.....	.....
14	5,890	3.26	192	7,731	3.1	238	8,211	3.21	264
15	.....	.....	.....	7,263	4.1	298	7,493	4.17	313
16	.....	.....	.....	9,660	3.28	317	12,999	3.30	439
17	.....	.....	.....	.....	.....	.....	7,889	3.83	303
18	.....	.....	.....	.....	.....	.....	6,669	4.15	277
19	.....	.....	.....	.....	.....	.....	8,607	3.31	295
20	.....	.....	.....	.....	.....	.....	4,342	4.80	*209
Total	81,194	.....	3,135	85,267	.....	3,128	112,804	.....	4,300
Av. per cow.	5,800	3.86	224	7,105	3.66	260	8,057	3.81	307

*For 11 months.

The average yearly production per cow gives an increase of 83 pounds of butterfat per cow in two years. This is a gain of 97 pounds of butter per cow per year, which at the average price received brought $42.25, or more than the entire profit from the average dairy cow in Illinois.

The following tables are an interpretation of different cows' records in terms of profit and loss.

HERD NO. 1.

Cow No..	Milk, Lbs.	Fat, Lbs.	Profit.	Loss
1	1204	49	.....	$27 52
2	1236	50	.....	27 20
3	2944	88	.....	15.17
4	2597	91	.....	15 38
5	2548	98	.....	13 18
6	2475	99	.....	13 18
7	2569	105	.....	10 98
8	3164	117	.....	8 37
9	2829	123	.....	8 67
10	3380	149	.....	1 58
11	4582	158	$1 41	.....
12	4146	174	3 41	.....
13	4103	177	5 41	.....
14	4993	191	8 40	.....
15	4435	200	10 21	.....
			$28 84	$141 23
				28 84
				$112 39
Av. ...	3147	124		$7 49

HERD No. 2.

Cow No..	Milk, Lbs.	Fat, Lbs.	Profit.	Loss
1	5986	252	$22 66	.....
2	7920	254	23 84	.....
3	7800	260	25 75	.....
4	7169	293	32 20	.....
5	8300	295	35 00	.....
6	9010	322	39 87	.....
7	9045	333	42 07	.....
8	9043	337	44 27	.....
9	8877	344	44 27	.....
10	9999	348	53 53	.....
11	11293	376	63 99	.....
12	7632	403	56 69	.....
13	10289	422	69 70	.....
			$553 84	.....
Av. ...	8628	326	$42 60	.....

Difference in profit between best and poorest cow:

Herd No. 1..... $33.73
Herd No. 2..... 47.04

Herd No. 1 is phenomenal in the production of cows on the losing side of this account, and also in the excessive loss on many of them. Either one of the two most unprofitable cows lost the owner almost as much money as was made by all the cows on the credit side. The best cow is indeed inferior to the poorest cow in many herds.

The loss of $112 means that the owner received $112 less for the products from his dairy herd than he would have received had he simply sold the feed. The actual condition of this man's affairs is a forceful answer to the question, "Why test cows?" No man would conduct a losing business when fully aware of what he was doing. Poor as this herd is, the owner by disposing of the poorest two-thirds of this herd might have made a profit without buying a single cow; yet, this department has tested seventeen herds which had an average production lower than this.

Herd No. 2 is only a grade herd, yet its lowest cow returned a profit of over $22, which is more than twice that of the best cow in the poor herd. The difference between the profit of the individuals even in this herd is large, but the star boarders have been eliminated as a result of several years of keeping individual production records of the cows and replenishing the herd by using a good, pure-bred sire and raising the heifers from the best cows.

On only 96 acres of land, with prac-

tically no expense for purchased cows or feed, the owner is making, with this herd, a comfortable living for himself and family. He receives not only 5% interest on his capital and full pay for his manual labor, but the neat little sum of $554 as clear profit to compensate for his head work.

Peculiar Value of a Good Dairy Sire.

Aside from testing as a means of building up the dairy herd, the selection of a good, pure-bred sire is of great importance. Raising the heifer calves of good, high-producing cows is a fundamental requisite for the best and easiest improvement of the dairy herd. Many times too little attention is paid to the quality of the sire. Calves receive their qualities from both parents, and it is important that the calf have good parentage on the male side. In a herd of 40 cows, each cow each year represents 1/80 of a future herd, 40 cows represent 40/80, and the sire represents 40/80 or $\frac{1}{2}$ of the capacity for milk production and everything else transmitted to the calves which are to constitute the succeeding herd. In this way the sire becomes three-fourths, seven-eights, fifteen-sixteenths, etc., of the herd.

From generation to generation, a succession of well-selected sires increases and intensifies improvement in the herd. So the sire may be much more than half the herd when judged by the cumulative effect of the characteristics he transmits, and he may, within a few years, at slight expense, completely transform a dairy herd and more than double the herd's profit.

In herds tested by this station in one portion of the state, the average annual production per cow where grading has been practiced is 263 pounds of butterfat, and in the herds where grading has not been practiced, the average annual production is only 178 pounds, making a difference in favor of grading of 85 pounds of butterfat per cow which at 25 cents per pound is worth $21.25. If the profit can be increased so easily, any effort spent in improving the herd is surely well directed.

MASHER'S SEQUEL—CHAMPION GUERNSEY BULL.
—Courtesy The American Guernsey Cattle Club.

THE IMPORTANCE OF THE DAIRY INDUSTRY

H. B. GURLER
Macon, Miss.

TO me the most interesting study on the farm is the dairy cow. When I have learned that one cow in a dairy makes 100 pounds more butter fat in a year than another cow does on the same food, it causes me to scratch my head and get to thinking about how this can possibly be so. At the same time it opens up a field for improving our dairy work that I believe surpasses any open field of opportunity on the farm. We have learned on our farms in Mississippi where we have the low priced negro labor, that when we take into consideration the labor, the skim-milk and the manure which we get for profit all above 110 pounds of butter fat that the cow produces, we realize about $25 profit on a cow producing 200 pounds of butter fat. If we are so fortunate as to be able to sell our cream to ice cream makers we secure a better profit, and in this case we can put on the profit side all we get from the cow above 100 pounds of butter fat.

As I think about this work my mind goes back nearly fifty years to the time when I purchased a worn out wheat farm in Illinois and soon discovered that I could save no more by working this farm than I could working on a salary for some of my neighbors. Making this discovery caused me to go into the dairy business and I soon learned about the difference in individual cows and tried to devise some practical plan to aid me in discovering the profitable cows in my dairy the milk from which I was making into butter on the farm. I remember how disappointed I was when I discovered that there was nearly as much difference in gravity cream as there was in milk and that I could not rely at all on the gravity cream test

BANOSTINE BELLE DE KOL—FORMER WORLD CHAMPION HOLSTEIN COW.
Owned by Maplecrest Stock Farm, East Claridon, Ohio

which drove me to make a churn test of each cow. But it paid well for all the time and labor as I increased the profit over 300% by two years of this work. Now what excuse has a dairyman for not becoming acquainted with each cow in his dairy since the Babcock test has so simplified the work that there is no excuse left for not knowing which cow is a money maker?

It is very interesting to me here in Mississippi to watch the change in feeling toward the dairyman and the dairy business in general where the boll weevil and the European war have broken the hearts of the cotton grower. Our creamery opened for business one year and a half ago and is now making over 450 pounds of butter per day which sells with the best northern butter that comes into the south, and we are able to sell all our make at top prices. One trouble here with this cotton section has been that the negroes did not work any more than half of the time, and they do not at first take kindly to working every day in the year, but it pleases them to get their pay every month.

The prairie land responds remarkably to stable manure after being cultivated in some cases for 75 years without any fertilizer. Seven years ago there was not a silo in this (Noxubee) county, but there are now over 60 and many will be built this year as all livestock growers are learning that they cannot afford to get along without them.

We are aiming to make our county the banner dairy county south of the Ohio River in the production of butter. We do not expect to surpass some parts of Kentucky and Tennessee in breeding Jerseys as they have a long start on us, but we are developing a good supply of excellent grade Jersey cows which bring an income of $10 per month on our pastures.

FIRST PRIZE EXHIBITION HERD—NATIONAL DAIRY SHOW, 1913.
Owned by Adam Seitz, Waukesha, Wis.
—Courtesy Ayrshire Breeders' Association.

THE PROPRIETY OF JUDGING DAIRY CATTLE BY CONFORMATION

G. A. BOGER, '15

IN the early days of dairying the only merits on which a cow was selected by those unacquainted with her production, were her physical characteristics. The result of this selection was the breeding of cows of good dairy type and conformation rather than individual production of milk and butter fat. However, this standard of dairy type was supposed to correlate very closely to the milk producing qualities of cows which was true to a large extent, and it has been largely on those standards that the high producing cow of today has been developed.

MURNE COWAN—WORLD CHAMPION GUERNSEY COW
Owned by Anna Dean Farm, Barberton, Ohio.

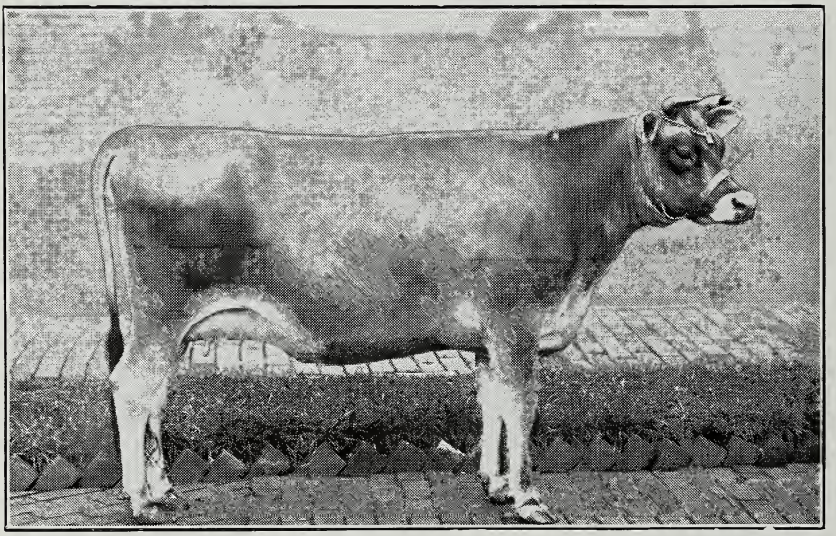
The dairy cow must be considered as a machine for the production of milk and butter fat in large quantities and for long periods of time. If this machine is correctly assembled there is no reason why the cow should not reach the limit of milk production. It has been found that there are certain physical characteristics which enable the cow to perform these functional duties. Although these essentials have been determined after long years of experience with dairy cattle they are not as accurately known as they should be to make dairy cow selection by conformation absolute.

No one can refute the fact that selection by conformation is very valuable but yet it is necessary that one use conservatism in the use of this method. In order to point out this necessity let us look at the production of some of the best cows. In the show ring the Island type of Jersey is found to be far superior to the American type of

Jersey, the latter showing an inferiority in quality and breed type but having a larger size and greater digestive capacity. In fact the judge recognizes only the Island type in the show ring, but nevertheless the American type holds most of the high production records for the Jersey breed.

In the Guernsey herd at the Anna Dean Farm is a large number of high producing cows with records of seven hundred to nine hundred pounds. Here we find also the cow, Murne Cowan, Maxie De Kol 2nd. This cow is under test at the present time in Ohio and in the first 120 days of her test produced 463 pounds of butter fat and 10,260 pounds of milk. In the fourth month of her lactation period she carried extraordinarily good fleshing, particularly on the rump, for which the dairy cow judge would criticise her severely.

Many other cases might be cited of cows with very good production records that are extremely faulty in conformation. But although dairy judg-



GRAND CHAMPION JERSEY FEMALE—NATIONAL DAIRY SHOW, 1914.
Noble's Jolly Norah, Owned by Elmendorf Farm.
—Courtesy "The Ohio Farmer."

which has recently broken the world's record by producing 1098.18 pounds of butter fat in one year. When comparing these cows with the generally accepted standards of dairy types we take particular notice of the withers. These parts are quite heavy and well rounded and the animals are generally termed deficient at this point. Yet this is true of nearly all of the high producing cows in the herd, even of Murne Cowan herself.

Another instance is a cow of the Holstein-Friesian breed, Crown Princess

ing may fail in these particular cases, nevertheless, this point of selection needs careful consideration. High producing cattle, as a rule, conform very closely to the important standards laid down by the judge and the foregoing illustrations have only been mentioned to point out the necessity of conservatism in the selection of cows by their physical characteristics. We should not be influenced too greatly by such minor defects of the so-called "type" of dairy cow.

There are a few points which all

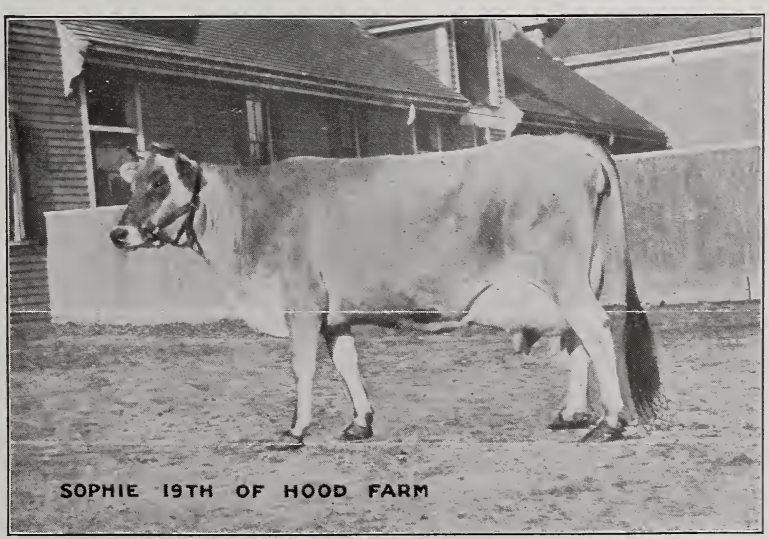
good cows have in common and which may be taken almost absolutely as a good sign of milk production. These are the development of the udder, the capacity of the barrel and the indications of constitutional vigor which the cow shows. If a cow is good in these points it is hardly advisable to discredit her on any other points as far as being a good producer is concerned.

Since the official testing of cows has come into practice the value of type selection has decreased. Yet it still finds an important place from the fact that there are comparatively few cows with production records. Even if a cow does have a production record, one does not always know the conditions under which it was made and, therefore, does not know exactly what value to place on the record.

In considering the utility of the dairy cow, her production of milk and butter fat is not all that must be considered. She must also be a good producer of calves and be able to transmit her abilities to her offspring. If a cow is a good producer and extremely lacking in dairy type it is hardly probable that she will transmit her ability to her progeny. A certain degree of symmetry is compatible with relatively high production. The breeders of the past who have sought a combination of symmetry and production have been the successful breeders in the long run. Therefore, one must select cows with good dairy type if he wishes to prolong the production of his herd into the offspring of his cows.

Outside of the economical functions of production the breeder must secure animals that "show off" to good advantage in order to have them sell readily. Bulls especially require good conformation in order to make ready sales. With some farmers the importance of income from breeding stock is greater than that from milk or butter sales.

The final result of selection should be a combination of the two methods; namely, type and production. Too great emphasis of either one with neglect of the other will certainly bring disastrous results in the development of the herd.



SOPHIE 19TH OF HOOD FARM—WORLD CHAMPION JERSEY COW.
Owned by Hood Farm, Lowell, Mass.

A PLEA FOR THE SADDLE HORSE

PROF. CARL W. GAY
University of Pennsylvania

THE old admonition "Business before Pleasure," has been applied with great persistence to the classes of horses to which students and stockmen's attention is directed. One almost wonders if he dares to champion the cause of any other than the draft horse in the columns of an agricultural publication; it is unorthodox. There are good and sufficient reasons why the draft horse is the horse to hold before the farmers as a business proposition, but to accord him an exclusive place on our programs and in our columns, is only partial representation of the subject.

A century or more before the horse was used in the fields of agriculture and commerce, various forms of horse sports were indulged in. Fox hunting, racing, polo, gymkhana, antedate the demand for horses to work on the farms and city streets.

As we analyse the situation today, we find unmistakable evidence that the horse is as likely to endure as a sporting proposition as in any other realm in which he is engaged. Competition with the motor is less keen in this than in any other field. To those who find recreation and pleasure in riding and driving, the motor car is no substitute. Such an arrangement leaves horses in the hands of horse men, which is to the mutual advantage of both. No true horseman regrets to see the taxi supplant the cabby nor the livery stable give place to the garage.

It has long been conceded that, "There is nothing so good for the inside of a man as the outside of a horse," and horses figure more conspicuously in doctor's prescriptions today than ever. Not only is the patronage of the pleasure horse to be recommended but his production offers special remuneration to those who are qualified and equipped to breed and school him. Hence, we have ample justification and need make no apology for the subject of this discussion.

Of the various classes of horses in the "other than work" division, the saddle horse is most noteworthy. To best appreciate him, if one is fortunate enough to own a saddle horse, or to realize most from his production, one should understand fully the requirements of a finished saddle performance and the type of horse best qualified to meet them.

The well schooled saddle horse is the most versatile of all horses. In addition to being up to weight and sure of foot, he must know how to bend and place himself so as to carry the weight most agreeably to his rider and with the least distress to himself. His schooling must be so thorough as to make him readily responsive to hand and heel as well as to the rein on his neck. The saddle horse is a two ended horse; both ends should operate coordinately but in response to separate control. The fore-end is governed by the reins and to some extent, perhaps, by the knees, while the hind quarters are under command of the heels. The saddle horse's chin belongs in, neither extended nor up in the air. This position enables the rider to keep him well in hand and compels the horse to displace his center of gravity backward and thus lighten the fore-end. He should go the gaits distinctly, canter on either lead at command, following with the

proper foot behind so as to avoid a cross canter, back, traverse or sidestep and stand to be mounted. Pulling, boring, rearing, bolting or shying constitute serious misconduct on the part of the saddle horse. Most saddle horses go well in harness and many of them serve especially well as combination or riding and driving horses.

KENTUCKY CHOICE—A CHAMPION AND A SIRE OF CHAMPIONS.
(From "Productive Horse Husbandry." The J. B. Lippincott Co.)

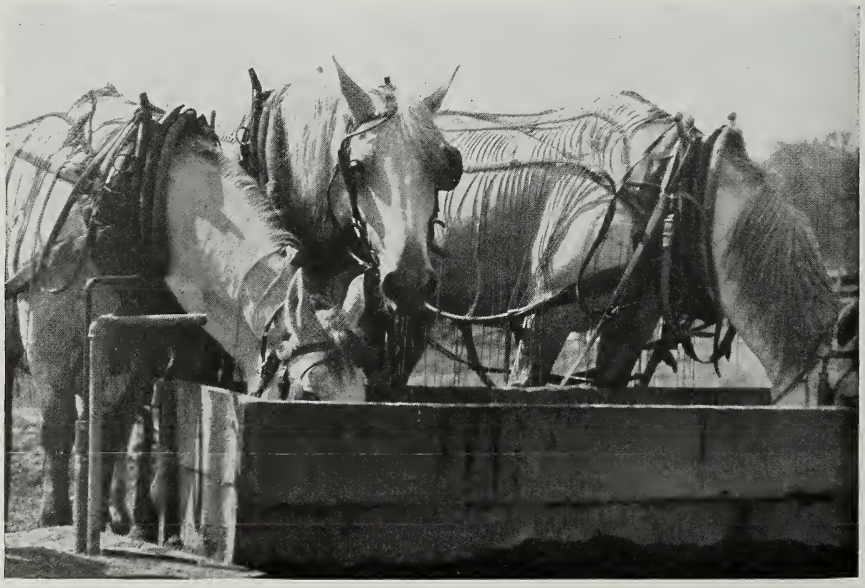
In order to satisfy the demands of such a complex performance, the saddle horse must possess, in addition to a high order of intelligence, a distinctly saddle form. The fore-end is his most distinctive part and all the features of the fore-end can be attributed to one thing in particular—a longer and more sloping shoulder than is found in any other type of horse. This sort of shoulder is essential in a saddle horse for the following reasons: This shoulder, with a long, sloping pastern, with which it is correlated, insures an elastic stride to take the roughness out of the ride. Indirectly, it is responsible for the high withers which extend so well back as to keep the saddle in the place where the weight should be borne and give the impression of much horse in front. With this style of shoulders and withers, there goes also a wedged-shaped middle which keeps

the saddle from turning and enables the rider to maintain a firm knee grip and comfortable seat without spreading him too much. Low withers and round hips would defeat both of these ends. Also correlated with the long, sloping shoulder is a long, shapely neck, which the horse can readily be taught to flex, insuring a light, responsive mouth and proper carriage of the head, causing him to go in a collected manner. The saddle horse's back should be short and strong for obvious reasons and he should preferably carry a high set tail.

His way of going is also distinctive, the spring of the step and the collected way in which he goes, supporting the saddle at every phase of the stride, being especially marked.

There is a saddle horse for nearly every kind of a ride that one could desire. The gaited horse, with his easy slow gaits and his flash rack, serves most acceptably either in the role of the business saddle horse or of the handsomest show horse, standing or going, that could fill one's eyes. The walk-trot-canter horse may be either a Park Hack, good looking and well mannered for a dignified ride in the park, or a Road Hack of more substantial pattern and capable of a cross-country ride when called upon. The hunter can gallop after fox hounds with light, medium or heavy weight up and go anywhere the fox leads the hounds, which necessitates some stiff and clever jumping.

The gaited saddle horses are chiefly saddle-bred—that is, of the blood of the American Saddle Horse. So are the majority of the walk-trot-canter horses, although the Thoroughbred or "long tailed," walk-trot-canter horse is becoming so popular as to be separately classified at some of the shows. Hunters and polo ponies are clean-bred or part-bred—all or part of Thoroughbred breeding.



AT THE NOON HOUR.

THE INFLUENCE OF THE EUROPEAN WAR ON HORSE BREEDING IN AMERICA

WAYNE DINSMORE
Secretary Percheron Society of America

WE are intensely interested in the the great conflict that is now raging in Europe, the greatest the world has ever known, and as horsemen we are particularly interested in the effect of this war upon horse breeding operations in America. The first effect of the war has been the total cessation of importations; no animals have been brought over since August, 1914. For the past fifteen years we have imported, on the average, more than one million dollars' worth of draft horses annually from European countries, and this figure represents money actually paid out in Europe for these horses. During the years 1911, 1912 and 1913, 9103 pure bred draft horses were imported from European countries, an average of 3034 per year. A large number of these were stallions of serviceable age. The total cessation of such importations means, of course, that this great trade must be supplied by the American breeders from the stock now in this country. So far as we are able to judge, importations from abroad are not at all likely within the next year, and some very experienced horsemen are of the opinion that we will not receive any considerable number of horses from abroad within the next five years. Next to the Percherons the Belgian horses were the ones imported in the greatest numbers, as a review of the figures shows that only 315 Clydesdales and 713 Shires were imported to the United States during 1911, 1912 and 1913. 2860 Belgians and 5103 Percherons were imported during the same time.

The United States has already approximately twenty-three million horses. Of the total number, however, only about one hundred and fifty thousand are pure bred draft horses of the Percheron, Belgian, Clydesdale, Shire, Suffolk or French draft breeds. It is perfectly safe to say that there are in round numbers about 100,000 head of pure bred Percherons. These are estimated to be in approximately equal numbers as to sex. So far as we can judge there are probably 36,000 or 37,000 pure bred Percheron mares and the same number of stallions of breeding age. Of the other draft breeds there are approximately 50,000 living animals, and about 40,000 are of breeding age, giving the United States altogether about 115,000 pure bred draft horses of breeding age, about equally divided as to sex. This is a very small number in proportion to the 23,000,000 head of horses in the United States. In view of the fact that importations from abroad, which have averaged over three thousand per year for the last three years, are now entirely shut off, we are inevitably forced to the conclusion that there will be a decided increase in the demand for good American bred draft horses of any of the recognized draft breeds, and that there will be with such increased demand, some slight increase in prices, even if conditions remain as they have for the past eight or ten years.

Horse Market on Upward Trend.

There are other indications, however, which indicate that conditions will not remain as they have for the past eight or ten years, but that on the contrary they will improve, so far as horse

breeding is concerned. The nations of Europe find the horse indispensable in the war field. Motor trucks and railway trains have rendered tremendous service in the transportation of food and ammunition supplies, but in the final show-down, when heavy artillery must be pulled into position across plowed fields, over ditches or through broken land or timber, horses are absolutely necessary. Russia has horses enough of her own, but France and Great Britain have been buying freely in the United States since the outbreak of the war. There is every prospect that they will make heavier purchases in the future than at any time in the past. Between 60,000 and 70,000 head of horses have already been shipped abroad. Around 30,000 more, which have been purchased for future shipments, are being held in reserve stations in various parts of the United States and Canada for shipment as soon as transports are available. The horses bought by Great Britain are inspected and paid for in this country, and are transported to Great Britain at that Government's risk and expense. Horses purchased on France's account so far, have been bought on a contract which requires safe delivery at Havre, the expense and risk of transportation to seaboard port and across the Atlantic Ocean being borne by the contractor, a New York financier. It should not surprise us to see a quarter of a million horses shipped abroad within the next year. The sale and shipment of this stock has been of decided benefit to American horse breeding interests for it has taken out a class of horses for which there has been, in recent years, very little demand in this country. The elimination of this undersized, unclassified stock will inevitably result in an increased demand for the horses left in this country, and it will unquestionably stimulate the demand for mares of good draft type, whether grade or pure bred. Artillery horses, weighing from 1200 to 1300 pounds most of which are of grade draft stock somewhat on the order of the farm chunks have been selling very readily at $160 to $185 to foreign contractors, while the light weight stuff, running from 1000 to 1100 pounds, intended for mounted infantry and cavalry purposes, has been available in greater supply than so far needed at $120 to $140. It is evident, therefore, that even this slight difference in weight has made a difference of $30 to $40 per head. Even farmer breeders will not fail to appreciate that the good draft mares, even of grade breeding, weighing from 1400 to 1700 pounds, are better prospects for future ownership than light weight horses weighing around 1000 to 1200 pounds. The second great result of the European war, therefore, if it continues for any length of time, will be to clean out our undesirable and heretofore unwanted horses, with the immediate result of increased demand for horses of draft type and weight, and a corresponding increase in prices.

Future of Draft Horse Industry.

Horses are today more numerous by nearly 4,000,000 head, and are higher in price than in 1900 in spite of the rapid increase of automobiles, auto trucks and tractor engines. Transportation needs have increased more rapidly than the agencies of transportation, and so far as we can judge the future there is no reason to believe that there will be any serious curtailment in demand for horses within the next fifty years.

HORSES VS. AUTO TRUCKS

PROF. D. J. KAYS
Ohio State University

THE motor truck as an economic and efficient factor in business has been a much-preached gospel. Truck manufacturers have contributed magnificent sums to newspapers and trade periodicals for advertising space. Everywhere, high salaried and capable salesmen have been employed to explain and laud the merits of their wares. They have capitalized the truck in the eyes of business firms by reference to its value as an advertising medium. They have argued long and patiently for the gas driven vehicle, claiming for it greater efficiency and minimized expense of operation. They have brought forth figures to show how gas power has solved the problems of transportation. Yes, they have done more than this—they have been heard to say that coincident with the purchase of a truck, is the coming of an economic era in business.

THE TYPE THAT IS A CONSTANT SOURCE OF INCOME TO THE FARMER.

But, there are two sides to every story. The auto-truck salesman, who a few years ago, prophesied the passing of the drafter within a period of five years, has lived to ponder on the error of his way. Present existing conditions place a blight upon the keenness of such prophetic vision. In spite of the well-directed solar-plexus blows of auto

truck manufacturer, dealer, and salesman, the drafter is still on the job and the "Horseless Age" is yet to come.

Last December a survey was made in the city of Columbus, to determine the relative efficiency of horses and auto trucks for purposes of transportation. A report from one of the large express companies reads as follows:

"Two years ago, we purchased two trucks and have given them as fair a trial as our business conditions would permit. We have found that the truck for our business has been a high priced brand of experience. In all fairness to the trucks, however, we wish to say that they have given fair service, on long, straightaway runs, over good roads, to freight houses and distributing points. On delivery routes, where many stops are necessary, the truck is of no use in our business. The big investment necessary in buying a truck, the rapid depreciation on this investment, the big repair bills, the immense outlay for new tires, gasoline bills, complicated troubles of one kind and another, all of these things total an immense bill of expense in the course of a year. We had to sell one truck after owning it about one year, for less than twenty-five per cent of its original cost. We shall use our other truck for some time, but when it becomes unfit for service, we shall discontinue the use of trucks. It has cost us more per pound to transport our goods with trucks and horses, than it did when operating the business with horses alone. Our experience with trucks does not warrant investment in another."

This report with slight variations is typical of the reports from other business firms. The prevailing opinion of business houses, goes to show that the truck is supplementing, but not displacing the drafter for city use. On long hauls, over good roads, especially in hot weather, the truck has proved its value. In the down-town districts, under congested traffic conditions, the horse is more efficient than the truck. Statistics go to show that about eighty per cent of a firm's business is done down town where the drafter as a source of power gets the call on the auto truck.

In the country, the chief demand from the farm is for draft mares that are big enough to do farm work and at the same time produce colts. As in the case of the city demand for horses, the indications are that the farm demand for horses is assured. A glance at census returns in this country for the years 1900-1910 shows that the population of the United States increased 21 per cent. During the same period cattle production decreased eight per cent, hog production seven per cent, and sheep production fourteen per cent. Horse production increased only eight per cent. These figures translated mean that whenever live stock production decreases, the acreage of tilled land increases and this in turn means an increased demand for horses as a source of power on these lands.

Furthermore, as population increases, more intensive systems of farming will be practiced. Then, even more than at the present, will the horse stand in favor with the farmer as the source of power in tilling the soil.

The result of experience with the gas driven vehicle in the city and on the farm goes to show that it simply supplements the horse. Breeders of draft horses have no occasion to be apprehensive about the demand for their product. Market geldings that combine in their make-up the qualifications of good draft horses are difficult to find, but mighty easy to peddle.

PROSPECTS IN THE DRAFT HORSE BREEDING BUSINESS

J. H. S. JOHNSTONE
Chicago, Ill.

DISCRIMINATION so far this season against the inferior, home-bred draft stallion has been severe. Never before has the demand been so insistently for high-class horses. In fact, some breeders who have paid little attention to their scheme of mating and less to feeding have been very sadly disappointed when it came to cashing in their surplus. There is no doubt that too many farmers have invested in pure-bred mares without having learned the first principles of caring for animals of that sort and their failure to feed either the dams or the colts properly, and to mate the mares with the right stallions, has borne its own fruit.

PURE BRED PERCHERON MARES IN THE FIELD.
Dunhams, Wayne Illinois.

Prof. W. J. Kennedy says, "Beginners in the pure-bred horse breeding business as a rule make the mistake of not buying a sufficiently meritorious stallion. Quite often they will pay good prices for their mares, yet refuse to invest in a stallion good enough to maintain the merit of the foundation stock. Say, for instance, that a beginner buys three or four mares and pays $700 apiece for them. If he wants imported mares he can hardly get them worth shipping home for less than that and yet in all probability he will try to buy a stallion to mate with them for $1,000 or maybe less. Now the stallions that you can buy for $1,000 are not the kind that are most profitable on pure-bred mares, but there are so many other factors operative in the deal that may tyros lose sight of the main issue. No farmer can make a success of trying to breed pure-bred drafters and standing his horse for country service as well. If the stallion is good enough to breed to registered mares, it is dol-

lars to apples he can not command a fee commensurate with his excellence, and if in some states he should be hurt and later to be turned down by the stallion licensing board, the owner would feel more like quitting than going ahead. In such a case, the next thing that happens is that this man invests in a stallion so cheap that it makes little difference whether he is crabbed or not. If he is the loss is not great anyhow, so far as the horse is concerned, but to breed such a cheap beast to registered mares is little short of a sin and a shame."

Prof. Kennedy enjoys a wide experience and his outline of existing conditions is correct. Those who have followed the reports of the sales closely will have noticed that prices have been very uneven, indicating that for the really meritorious stock there have been many buyers and plenty of money in sight, whereas the duffers have been slow sale at low prices. At the combination sales the offerings have been rather below the standard, due doubtless to the desire of many small breeders to clear out their undesirable holdings at some sort of figures and so get out of the expense of feeding. Prices made at such vendues are not to be accepted as true guides to values. In establishing the proper rating of the figures representing the prices paid at such sales, it must not be forgotten that this is a most peculiar year, that bankers are more than unusually closefisted in all their dealings with farmers, that much capital is in hiding, that interest rates are unusually high and that prospects for a change toward betterment are not immediate.

Add to these undeniable conditions the very mean or at best mediocre calibre of many of the animals sent to combination sales, and the wonder is not that bids were so low but that they proved so high. In other words there was a good deal of common stuff to sell and the holders were determined to cash it on some basis, which is a very different scenario from that which one may reasonably associate with breeders' private sales.

In the stables of the importers there has been an unusual demand for draft stallions of good class, and vendors have as a rule found less difficulty in placing their best lots than those of more medium merit. Dealers with respectable home-bred stallions to offer at $600 to $700 or less have been able to dispose of them quite readily and again sales of imported sorts around $2,000 or above have not been hard to make. But the imported stallions saleable at from $1,000 to $1,500, formerly the backbone of the business, have not been in anything like as good demand, relatively at least, as the other two classes

Argument based on these facts is that men standing stallions in the country are averse to investing any material sum of money, expecting this spring a demand on the part of the farmers for a reduction of the fees, while those who have pure-bred mares of their own have profited by the lessons of the sales and are determined to produce a better article in the future. This does not promise any improvement in the ordinary commercial horse stock of the country, but it does bespeak considerable betterment among the pure-bred drafters. All of the well-informed men in the business agree that henceforth high prices and a ready sale will await production of high class young drafters. Hence it will not be long before a stallion distinctly inferior will bring no more than a gelding of identical individuality.

SHOW RING PROCEDURE

DIRECTOR C. F. CURTISS
Iowa Experiment Station

THE range of ability in the show ring extends from the crudest novice to the veritable past master of the profession. Prizes do not always go to the best animals and in some instances it is not the fault of the judges. Many a good animal has been worthy of a better presentation; and others have shown up to the full limit of their merits, and possibly a little beyond. Many a battle has been won by strategy and skill in the ring, or lost by the lack of it. It is the judge's task to judge the animals as they are, not as they might be. Grooms' prizes are sometimes awarded where a majority of the contestants have little conception of the qualifications of a good groom or showman.

PERCHERON FILLIES BY DRAGON.
—Courtesy "The Field Illustrated."

To begin with, the animal should be properly fitted. The fitting process does not begin a few weeks before the show circuit opens, but with the close of the previous year's circuit. It need not be a period of consistent and intelligent preparation. When the animal comes into the ring, it should be clean. Slovenliness is not a mark of practical excellence. The groom's clothes should be suitable for the job and not too dressy. Contestants should be in the ring promptly when called. Jockeying for time or place seldom helps an inferior animal, and a good one does not need it. It always pays to be courteous, even to a competitor. Good sportsmanship is admired and wins favor the world over.

The attendant should bear in mind that the show lasts from the time he enters the ring until the ribbons are tied, not merely for a few minutes

when the judge's eyes are on a particular animal. He should watch the judge and show all the time. Battles are often won after the other fellow quits. Concede nothing to a competitor until he gets it. Then concede him all he gets until the next time. Remember that the even tempered exhibitor with perfect control over himself has the best control over his animal, and the best chance to win.

The showman must be alert. When called out he should respond at once and follow directions exactly. In showing, an animal should always be kept directly in front of the judges—should be moved straight away and straight back to the judge and stopped in front of him. Unless the judge steps aside and asks the attendant to go on by him, he should stop in front of him, not behind him, or so as to compel him to get out of the way. The attendant should always be on the outside when turning with an animal at the halter.

Showing may be overdone, causing a horse to go unsteady or out of line. The man with the whip is often a positive menace in the show ring. Overweighing with heavy shoes sometimes unbalances the action and turns a victory the wrong way.

Animals need to be trained to stand well as well as to move properly. In close competition, victory is with the strong and the fully fit and prepared contestant. Even the best are at times likely to need all the advantage of mastery in every detail. A good showman never leaves a fair trick unturned.—The Breeder's Gazette.

WHO'S COMING?

HEALTH AND HYGIENE OF SWINE

J. S. COFFEY
Ohio State University

EVER since swine became recognized as a part of the world's live stock production, they have been recognized, and appropriately so, as the mortgage raisers of the farm. This, too, in spite of the fact that swine have been subjected to and acted upon by the ravages of disease. Time, and time again, the farmer has witnessed the entire depletion of his herd, which with any other kind of live stock would have proven a complete disappointment and resulted no doubt in a total liquidation with respect to that particular kind of live stock. But such has not been so with the swine. In the past the swine grower has figured that he could lose one crop of pigs in five and still make profit on the industry as a whole.

If the swine grower has maintained his herd under such a handicap, and at the same time made profits, then it stands to reason that in these days when hog cholera preventatives are so effective, he should feel secure in the production of pork. So far, it has not been a question with the corn belt farmer as to whether or not he can make profits on his swine, but it has been a question of whether or not he can keep the animals healthy.

Swine in the Past.

In the early days of swine production, there were not the difficulties to contend with that are now experienced. This was true for three reasons. First, the country as a whole was not so thickly populated with swine and contagion had less opportunity for spreading. Second, environmental conditions were such naturally that it was made conducive to the animal's health. At first high ground was settled. This being naturally well drained was more healthful than lower areas. Third, the animals depended more upon natural sources for their food, obtaining it in large measure from underground roots and bulbs, from tender shrubs and from mast of many kinds. Numerous of these food constituents contained medicinal elements which served to keep the animals healthy. Aside from this, the exercise obtained by the animals in seeking food, while not conducive to fat production, was a strong factor in maintaining their health.

The Present and the Future.

As time progressed and the country became more thickly populated with both men and swine, existing conditions also changed. There being more animals, contagion had greater opportunity for spreading. Men in their breeding sought to eliminate the rangy active type of hog and substitute for it the low set, early maturing animal of the distinctly lazy and sluggish temperament. Such animals, because of their very dispositions, were more subject to disease than the early type. Again, men in their anxiety to increase profits, overstocked their farms and were not careful in selecting the abode for their animals. This was detrimental as many will testify. These conditions hold true for the average corn belt farm of today. Certainly there are exceptions. For instance in southern Indiana, in the more rolling areas, the conditions are much the same as prevailed in the earlier swine growing regions in general. Here, the farmers declare there is only one disease fatal to swine, that is, "bloody nose cholera," induced by the ax at butchering

time. Many other central western states have portions of similar territory, and such districts should be taken advantage of for profitable swine production.

At present, next to the health of his animals, the farmer seems most interested in the economic growing and fattening of his swine. In general, we may say there are five factors upon which profits to the swine producer are dependent. These factors named in order of their importance are, (1) health and hygiene of the animals, (2) a thorough knowledge of the practice of feeding, (3) the maintenance of a prolific strain, (4) an excellent quality of product to satisfy a discriminating market, and (5) a reasonably high and steady level of prices. If it were possible for the producer to absolutely regulate these factors, then he need have no fears relative to his ultimate profits.

Maintenance of Health and Hygiene.

Modern science has contributed greatly to the great consideration of keeping swine healthy. Hog cholera has ever been the nightmare of the swine producer, but with our present methods of immunization, death from this disease may be reduced to a minimum. Certainly, the swine producer must use proper methods to prevention and furthermore he must begin in time. Briefly stated the system of immunization should be as follows: The pigs should be given the single treatment when four to five weeks of age, although the pig born of an immune sow is by heritage immune for four or five weeks. When the pigs are three to five months of age, the immunization should be made more complete by the administration of the double treatment. The details of treatment cannot be dealt with in this discussion. However, upon application to a capable veterinarian such may be obtained. The advice given in the preceding is mostly of a positive nature. In contrast a few "don'ts" should be observed. First, do not postpone the immuning of animals until a malignant form of cholera appears. Second, do not take chances by employing a bungling amateur or an incompetent veterinarian. Third, be sure that both the serum and virus are of standard make and of good quality. A course outlined as above if carried out in detail will greatly prevent losses and eventually lead to greater profits to the swine producer.

There are other important phases of hygiene and health which if properly considered result profitably to the swine grower. However, nearly all other detrimental influences may be avoided by proper attention to one and all of the following phases of management: (1) a sanitary abode including cleanliness of quarters, light, ventilation and drainage, (2) wholesome and nutritious food, and (3) sufficient exercise. Such ailments as thumps, lame backs, dust coughs, weak pasterns and stunted growth are nine times out of ten due to neglect of one or all of these important phases of management. Considerable time and space could be devoted to telling the swine grower how to maintain a sanitary abode and give his animals exercise, however, such advice seems superfluous. The swine grower should know when his pens are foul, damp, and poorly lighted. He should also know when the quarters are cramped and offering little opportunity for exercise and sunshine getting, of the little pigs. When he finds these adverse conditions prevailing, he must correct them if he is to attain greatest success as a pig raiser.

Feeding of Swine.

The feeding of swine as applied to the health and welfare of the animals is worthy of separate attention. The bulk of recent experimentation in pork production has dealt with swine feeds and swine feeding. In dealing with this important phase of swine management, we cannot get away from the fact that corn must constitute the basis of a profitable ration. Nevertheless in view of most recent investigation it is evident that corn must be supplemented by other feeds if it is to be efficient from the standpoints of rapid growth, fattening and the welfare of the animal. It has been quite generally demonstrated that corn when fed alone does not produce sufficient growth in pigs. This is true chiefly because there is to begin with a too high proportion of the fat and energy producing food constituted in corn, and a corresponding low proportion of the muscle, bone and tissue building nutrients. Furthermore, the character of the bone and muscle producing nutrient, or, in other words, the protein in corn, is of such nature as to be of little value to the pig in making growth. Osborne and Mendel in investigations of the feeding value of corn, found that the protein of this feed is made up of 58% of the proteid zein, and 42% of other proteids. Rats fed on the proteid zein alone failed to make any growth but rather lost weight. Thus if any importance is to be attached to these findings, we must assume that over half the protein in corn is of little or no value in producing growth.

Now the question arises as to what these supplementary feeds will be. Tankage in dry lot feeding has been found most satisfactory. In general ten parts of corn to one of tankage constitutes a good combination growing and fattening ration, and here we may say that swine production in the corn belt must be more or less of a simultaneous growing and fattening process, if the animals are to be marketed as early as is desired. The same may be fed to growing breeding animals, and in addition, skim-milk, clover or alfalfa hay may be used to an advantage. The by-products of the flour milling industry are excellent for producing growth, but to use them in sufficient quantity to balance a ration, the basis of which is corn, makes them expensive. Cotton seed meal, although containing a goodly proportion of the nutrient protein, is unsafe for swine feeding as death has many times resulted from its use.

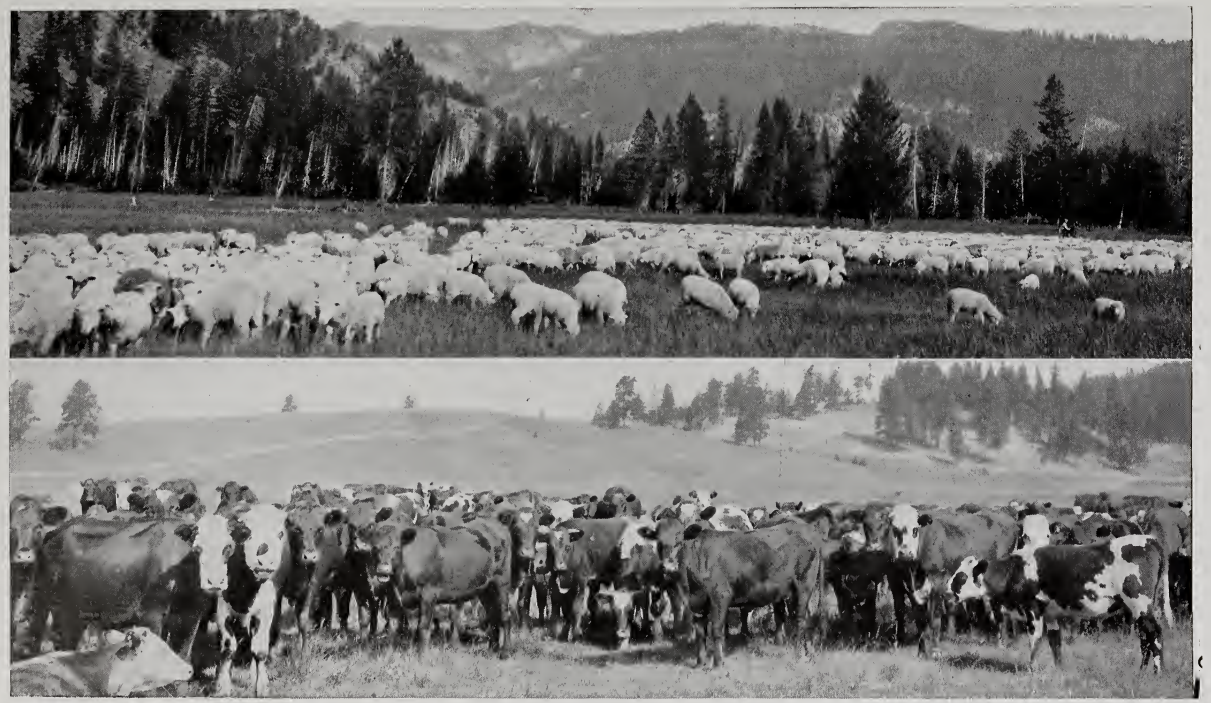
The ideal way of growing and fattening swine is by the supplementary use of forage. A simple formula derived long ago by practical swinemen is as follows: pigs plus clover and corn make praiseworthy profits. There are four chief advantages connected with the growing and fattening of swine on forage. These are, (1) the exercise derived by the animal roaming over the pasture, (2) the sure and more equal distribution of manure over the fields, (3) the cheaper gains derived, as compared with dry lot feeding, and (4) the general health and welfare of the animal. Any one of these factors, everything else being equal, would make the use of forage justifiable.

For a great many years clover has been the chief forage for swine, however there are many other good ones. Below is a table taken from Purdue Experiment Station circular 35, which will give the swine producer some idea of how he may provide forage for his swine over a greater part of the year.

Table 1—Pasture for Hogs by Months.

Month	Name of Crop	Date of sowing.	Approximate length of time crop affords pasture	No. of 100 lb. hogs per acre
April	Rye	August or Sept.	Six weeks	10-15
May	Oats	Mar. 20 to Apr. 10	Six weeks	8-12
	Oats and rape	Mar. 20 to Apr. 10	Four weeks	12-20
	Oats and Canadian field peas	Mar. 20 to Apr. 10	Four weeks	12-20
	Rape	April 1-10	Four weeks	12-15
June	Rape and oats	April 10-30	Four weeks	15-20
	Canadian field peas and Oats	April 10-30	Four weeks	12-15
	Rape	April 10-30	Four weeks	12-20
July	Rape	April 1-10 and grazed down in May	Four weeks	12-20
	Rape	May 1-20	Four weeks	12-20
	Clover red or mammoth	Mar. 25 to Apr. 10 without nurse crop	Remainder of season	8-10
	Sorgum	May 10-20	Four weeks	10-20
August	Clover red or mammoth	Spring sown	Remainder of season	8-10
	Rape	Apr. 10-30 and grazed down in June	Four weeks	12-20
	Rape	June 1-15	Four weeks	12-20
	Sorgum	May 20-30	Four weeks	15-20
	Soy beans or cow peas	May 20 to June 1	Six weeks	12-18
September	Clover red or mammoth	Spring sown	Remainder of season	8-10
	Soy beans or cow peas	May 20 to June 15	Six weeks	12-18
	Rape	Second or third growth	Four weeks Fed in lots	12-20
	Pumpkins	May 15 to June 15	Fed in lots	
	Sorghum	May 20 to June 15		
October	Clover red or mammoth	Spring sown	Remainder of season	8-10
	Rape	Same as September	Four weeks	12-20
	Soy beans or cow peas	August 1-30 June 1 to July 15	Remainder of season Four weeks	8-10 12-20

Note the table given above was prepared by Professor M. L. Fisher and F. G. King, of the Purdue experiment station.



SHEEP AND CATTLE ON THE RANGE

THE AGRICULTURAL STUDENT

OF

OHIO STATE UNIVERSITY.

A MEDIUM FOR EXCHANGE OF IDEAS BETWEEN COLLEGE AND FARM

Published by the Students in the College of Agriculture. Established 1894.

Subscription Price, One Dollar the Year.

Entered at the Postoffice at Columbus, Ohio, as Second Class Matter.

COLUMBUS, OHIO, APRIL, 1915.

EDITORIAL

LIVE STOCK PROSPECTS.

"He made his money on hogs," "He always kept good cows" or "He began by raising stock," are familiar terms we often hear applied to the men who have made a success of farming. Such comment is truly appropriate, for it is the general opinion that there is no system of agriculture so remunerative and permanent as that of live stock farming. This is not intended to discourage the grain farmer, for many of these men have been able to maintain the fertility of their lands by such a practice. In general, however, success is more certain to the farmer by careful animal husbandry. In every community live stock farming will be evidenced by fertile land, neat and well painted buildings, substantial fences, clean fence rows and a contented, prosperous people. On the other hand, grain farming communities will seldom show any of these features of improvement and wealth, but more frequently neglected buildings and fences and a soil of decreasing fertility.

Although affected this year by various causes, the live stock markets for the past few years have ever been on the upward trend as shown by the reports of the United States Department of Agriculture. Three years ago the average (weighted) price of meat animals (hogs, cattle, sheep and chickens) was $5.54 per hundred pounds; two years ago it was $6.70; and last year the price rose to $7.27. This year the average was $6.46 per hundred pounds, the drop being caused undoubtedly by

unusual liquidation of products and a partial loss of foreign trade. The depression should not be regarded as permanent, but as indeed encouraging, since the demand for breeding stock will be tremendous as soon as normal conditions are restored. Temporary depressions are found to exist in any business and slight drops in the market could be reasonably expected because of the undue shortage of stock due to foot and mouth disease.

However, with the high price of feeding stuffs and the demands of the markets more careful methods of husbandry become almost imperative. More attention will be given to methods of housing, feeding and sanitation as well as to marketing. The old adage that "the eye of the master fattens his cattle" was never more true than today. Careful breeding. selection and management are required to make a success of live stock farming, but the farmer who emphasizes these features will be amply rewarded.

¶ ¶ ¶ ¶

THE COW TESTING ASSOCIATION.

Many of our large associations and business enterprises owe their origin to the ideas evolved in a simple, ordinary manner by some ordinary men. Thus has come about the evolution of Ohio's greatest cow testing association. While attending a public sale one day, a certain dairyman of eastern Ohio purchased a number of articles which he thought might be made use of in his milk house. Among them was a four-bottle Babcock tester with all the accessories for testing milk. As the farmer unloaded the articles at his home he remarked that "he would try the blamed thing some rainy day," while a neighbor added that "the boys could amuse themselves with such a contrivance." Several days later, however, he determined to satisfy his curiosity by testing a few samples of milk.

To his surprise his "best" cows were not paying for their feed, while several young cows which he had kept mainly because they had "too much Jersey blood to make good beef" were making a profit of twelve dollars a month. This set him to thinking. It did not take him long to decide to dispose of the unprofitable cows, and by this action he was enabled to make a larger profit with fewer animals.

Furthermore, he did not stop with his own discovery, but reasoned that his neighbors had similar conditions that they should learn. He influenced many of them to test their cows and thus he came to show in a short time the value of his purchase at the public sale. Awakened interest followed which culminated in the formation of a cow testing association among the farmers of the community. Thus the dairy industry among these farmers was soon placed on a much firmer basis than it had ever been before.

The report of this association shows that the average production per cow for last year was 371 pounds of butter fat, which according to officials of the United States Department of Agriculture is the highest average of any association in this country. In addition it was found that the poorest cow produced milk at a cost of $1.51 per hundred pounds, while the best cow produced the same amount for $0.51. The total feed cost of the poorest cow was $53.83, as compared with $51.86 for the best cow.

Many other features concerning profitable dairying were discovered which gave still more permanence to the business. All this came about because one

man had discovered the key to successful dairying—that of testing cows.

At the present time we find much interest developing in Ohio in the matter of cow testing associations as well as in other co-operative live stock organizations. A number of communities have taken up the question and nearly all of them report favorably. Such action means better cows, more profits, more permanence to the dairy business, greater fertility and finally better and more efficient rural communities.

¶ ¶ ¶ ¶

POLITICS IN OHIO AGRICULTURE.

Following out his policies of "decentralization," Governor Willis has asked the members of the five state commissions to resign. In a few instances the members have complied with his request. Such a change of affairs at this period in the advance of agricultural progress in this state cannot carry with it all the best qualities that may be claimed for it. With the succession of political conditions and power in the executive department of the state, we must perceive some of the attendant evils of advantage of position, and the feeling of unrest that always accompany such a change of administration. This does not imply that a board of nine men can not meet our needs better than the present agricultural commission; the change has been well intended. Yet such an alteration carries with it the idea of dissatisfaction, restlessness and discontent. It is a step towards the destruction of the foundations that have already been laid for our advancement in the agricultural world.

In our own university we must see some of the attendant evils of a like change of conditions. The Board of Trustees has asked H. C. Price, for the past twelve years dean of the college of agriculture, to resign. After his resignation, which will become effective July 1, Dean Price will probably return to his farm in Licking County.

New policies and new plans have been started recently in the college. The agricultural extension work in particular has only recently received an impetus. The county agriculturists have been transferred to the agricultural college and their work will be directed in the future from this institution. May the successor of Dean Price carry out the policies that have been started to make Ohio a better agricultural state, its college a more powerful factor among its constituency and among other states, and the rural citizenship a more prosperous people.

¶ ¶ ¶ ¶

THE DAILY LANTERN.

With the change of publication from a weekly periodical to the daily newspaper of the university The Lantern has met with unqualified success. It has brought to the students of the university the news crisp and fresh each morning; it has helped to keep alive that greater spirit that we wish to see manifest in college students; and at the same time it has afforded the department of journalism a practical laboratory for training students in the newspaper world.

Great study has been shown in its originality, precision in the selection of the material that the students look forward to with interest each day, and withal a broad prospectum in the editorial comment and policies. It deserves the support of every faculty member and student connected with the university; the alumni should be proud of this superior representative of collegiate journalism. We wish it continued success.

The warm days of spring and increased longing for vacation are ushered in at the same time. Pupils look up from their books and give a sigh for the warm air and sunshine of the school yard. During these times cases of spring fever are at their height in schools susceptible to such a contagion. Does the longing of vacation increase the possibility of spring fever? Should the two go hand in hand? Are they related to each other?

The county superintendent enters one school which is wide awake and which seems to be as much alive as budding nature. The fact that the teacher and pupils are hard at work before schools close for summer vacation does not signify that they do not appreciate the coming of the spring, the threshold of a summer vacation.

Another school is burdened so much with spring lethargy that it even has a mild, soothing effect on the superintendent. The teacher who has no "let up" and who keeps the school activities at their best to the end is the one who is getting the most enjoyment from the work. It is his pupils that are more energetic; it is his school that the superintendent likes to visit.

Summing up everything we find this: that some schools fall far below their usual standards of work while others are little affected by decreased efficiency from this so-called spring fever. In fact, some schools do their best work at this time of the year. Superintendents testify to these differences of teachers to shake off the influence of dull, warm days and work to the end of having really accomplished something.

The home work unit system is increasing in popularity in many counties in Ohio. What is the object of such a system? What does it accomplish? Do parents favorably consider such things in connection with school work? Such are the questions asked about the home work unit system.

We might say in way of explanation that school credit is given for work done at home by the pupils. This credit becomes a part of the monthly and yearly grades of the pupils and has the same weight as the regular school branches. In some cases a certain per cent is added to the average grades for the school work. The credits may include any kinds of work which the pupil may do at home. The value is measured in credits according to the skill required to accomplish the work.

To the pupils and parents there comes the realization that such work is helping them to accomplish many problems. Most parents agree that children should work at home before and after school hours. Some think it a necessary pleasure and some think it very wearisome labor, while many do not realize that there is anything that they can do. A new and broader vision is then open to parents and pupils alike.

Another favorable phase is that it tends to equalize the chances of all pupils in passing from one grade to another. It often happens that there are bright pupils who started in at the head of their class in the book work, but who

do little work at home. Again there are others who do a great deal of work at home and who do not get along well in their book work. In making the pupils feel that physical skill and labor are as desirable as high grades on examination, a breach is spanned which opens a new life to many pupils. Such a thing is encouraging to both parents and teacher.

AN IDEAL RURAL SCHOOL.

THE rural school is the farmers' school. It must prepare children in the first eight grades for great responsibilities, for it is a conservative estimate that 90% of the children who enter rural schools never go any farther than the eighth grade. These boys and girls so educated are to be entrusted with the management of our tremendous agricultural wealth and almost boundless resources and opportunities. Our agricultural wealth may properly be estimated at $35,000,000,000. The value of our agricultural products now exceeds $9,000,000,000 annually.

It is very evident that the agricultural interests of the country are of vital interest to our national welfare, and that the rural life and rural school problems are among the things of greatest concern to American life. Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, and Nebraska are known as the Corn Belt. These represent one sixth of the land area of the United States and one-hundredth part of the land area of the globe, and yet in these states we are producing approximately one-half of all the corn in the world.

When we stop to make a survey of the regions to the southeast, northwest and west of the corn belt, we are impressed very forcibly with the fact that climate, topography, and occupations outside of this area will continue to make this region grow greater and greater in agricultural importance as our population increases. If our population doubles, production must be doubled. It will continue to be a problem of production and consumption. Our farm population has only doubled since 1870, but our powers of agricultural production are four times as great. Because of great advancement in the science of soil, plant and animal management, and great progress in the mechanical arts, the problem of agriculture is becoming more and more an educational problem. The farm problem is a school problem.

Agriculture is a broad field—it is everything from the study of a grain of sand to the highest productions in plant and animal life. Improvement is a problem of evolution, of the survival of the fittest, of breeding and selection; hence agriculture is one of the greatest of sciences.

Because of its responsibilities and possibilities the country school should be our best school. It is the right of the country child to demand an opportunity equal to that of any other child in any school. The rural community does not furnish alone the resources for the supply of our food products, but from the farm we must recruit our urban population. The rural school must cease to be the experiment station that tests the teacher's qualification for entering the village or city schools. The Ideal Rural School must become of such importance and be so conducted as to become the goal of the teacher's ambition and the pride of the country child.

The Ideal Rural School is a school composed of grounds, buildings, equipment, pupils, teachers and school officers, patrons and taxpayers working

in concord to make agriculture worthy of the highest aspirations for culture, refinement, honor, pleasure, profit and home life.

In order to understand more clearly the scope of the demands for an ideal rural school we should take an inventory of the defective points incident to the one-room, one-teacher schools, which are scattered about our state desperately striving to perpetuate themselves in their efficiency by appealing to prejudice, ignorance and determined incredulity that pertinaciously refuses to be enlightened. The schools are growing smaller because of declining interest. Interest in these schools is on the wane because of inefficiency. They are inefficient because they do not meet the demands of the age. The schools are often too small for organized games. There is lack of equipment in books, apparatus, maps, globes, reference books, pictures, or attractive grounds. The classes are small and there is a lack of incentives to rivalry, ambition and competition.

Six thousand young and inexperienced teachers begin teaching annually in Ohio. They begin in the rural schools. A part of these fail and the failures are too often the costly experiments of rural schools. Some teachers can govern the pupils of a certain age or grade, but they are poorly adapted to governing pupils of all ages and grades. A good teacher in one or more grades might fail as a superintendent.

The Ideal Rural School is therefore one that will remove all the defects of the one-room, one-teacher school.

1. There should be at least one teacher for every two grades.
2. There should be a first grade high school.
3. There should be a superintendent.
4. There should be a special teacher for every primary department.
5. There should be one teacher in the high school especially qualified to teach agriculture.

The buildings should be modern, possessing architectural beauty. There should be a tract of land of sufficient size to afford play grounds. Lawns, trees, shrubbery, vines, flowers and walks, and room for gardens, nurseries, and experiment plots. A school of 150 pupils enrolled should have at least 5 acres and a school of 250 to 300 should have at least 10 acres of ground.

There should be departments for training in manual arts and domestic science. These departments should be thoroughly equipped for practical instruction. There should be a laboratory properly equipped for the special course in agriculture planned in accordance with the agriculture adapted to the community.

There should be a rural organization formed for co-operation with the school in its work of social and educational improvement.

There should be moving pictures, and in short everything that will add to the interest of the school and help to keep boys and girls from leaving the schools at an early age.

The rural school should become under such conditions one of the greatest factors in this country for broadening the vision of ideals that give broader views of life and nobler conceptions of humanity.

H. L. GOLL,
Supervisor of Agricultural Education,
Northwest District of Ohio.

BOYS' STOCK JUDGING CONTESTS

Plans are well under way for the holding of Boy's Live Stock Judging Contests at about 40 county fairs this fall. The mere number indicates in a

measure the interest that is being taken in this educational feature of Ohio's great agricultural shows. As compared with the first year of the contests, when only three or four were held in the state, and last year, when 25 were held, the increase to 40 this year is really remarkable.

According to a new plan to be followed this year in conducting the contests, the boys who enter will receive more help from the College of Agriculture than they ever have before. Sometime previous to the fair and usually before school closes, an instructor will be sent into most of the counties to coach the boys of various schools in livestock judging. The boys will further receive an entry blank from their county fair secretary or direct from the College of Agriculture, which they will fill out and return to the college. Each boy's name will then be placed on a list to receive special bulletins on live stock judging. These questions will be sent in, graded by the instructor, and again returned to the boy. This training will come previous to the contest and will greatly help to train the boys for the judging.

In speaking of the contest held last year, Clark S. Wheeler, Supervisor of Extension Schools, who is arranging those for this fall, says: "The best thing about the contests in 1914 was that every boy who participated in them learned something. At some of the fairs, the boys were allowed to work on the very best stock in the county. The 700 young farmers who took part in the 25 contests came together for no other purpose than to practice judging live stock, interesting to them because this practice was put up in the form of a contest. Some of them thought they knew a thing or two about picking a good animal. Others thought they knew very little and therefore came to learn. All were sure that it was a fine thing to be a good judge of live stock."

County fairs certain of conducting the Boys' Livestock Judging Contests this year include the counties of Ashtabula, Athens, Auglaize, Carroll, Coshocton, Darke, Highland, Jackson, Jefferson, Lake, Logan, Madison, Mahoning, Mercer, Montgomery, Morgan, Muskingum, Portage, Putnam, Richland, Sandusky, Seneca, Shelby, Stark, Summit, Trumbull, Union, Van Wert, Washington and Wyandot. In addition, a contest will be held at the Forest City Fair near Cleveland. Other counties planning contests but which are not yet certain are Brown, Clark, Delaware, Fulton, Geauga, Hamilton, Medina, Morrow, Preble, Tuscarawas, and Williams. Attractive prizes have been offered by the various fair boards. In some instances pure-bred stock is to be given to the winners. At other fairs trophy cups and medals are chosen for prizes.

Another feature for this season is found in the fact that arrangements have been made whereby the boys winning the first three places in the contest will be given a free trip to Farmers' Week, next winter. Their expenses will be paid for an entire week in Columbus, and they will be taken care of in the best manner possible during Farmers' Week. At this time the "big" contest will be held. Three boys from each county will compose a team. These teams will compete with each other for the state prize. This promises to be an interesting event as more than 100 young farmers, the best livestock judges in their home counties, will make some keen competition.

In the preliminary coaching, which

is being held at the various schools in the counties, county school superintendents, county agriculturists and county Y. M. C A. secretaries have been of great assistance in arranging schedules. The county fair boards have taken an unusual interest in putting on a fine contest. The boys themselves are eager for the preliminary training from the instructor from the College of Agriculture, and to receive the bulletins especially prepared for them—all of which means some of the best live-stock judging contests ever held at the county fairs in Ohio.

GEO. B. CRANE,
Extension Department,
Ohio State University.

RULES FOR BOYS' STOCK JUDGING CONTESTS.

To Be Held At Ohio County Fairs This Fall.

1. All contestants must reside within the county.

2. Contestants are limited to boys and girls under 19 years of age who have not attended a State Agricultural College.

3. All contestants must report to the person in charge not later than 9:30 A. M. on the day of the contest.

4. Contestants shall fill out an application blank furnished by the Secretary, before the day of the contest.

5. A "team" shall consist of three contestants whose names have been furnished to the Secretary on one card before the day of the contest. Membership in a team shall in no way hinder the contestant from competition for an individual prize or trip.

6. Each contestant shall be given a number by the Secretary by which he shall be known during the contest.

7. Each contestant shall be required to place and give reasons for placing two or three classes of stock selected from the following list: Draft Horses, Beef Cattle, Dairy Cattle, Mutton Sheep, and Lard Hogs. The Association holding the contest shall determine which classes of stock will be used.

8. Score cards may be used in training the contestants beforehand but no score cards shall be used in the contest.

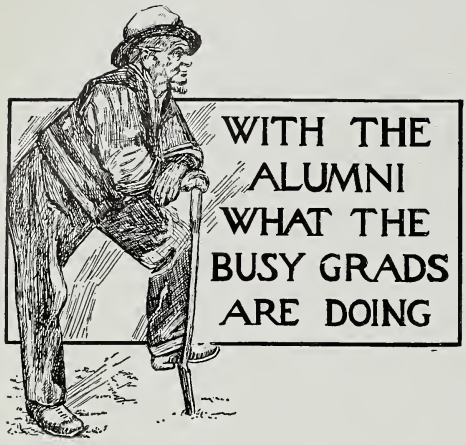
9. Printed forms will be given each contestant on which to make written reports of classes judged, and any contestant writing his name or placing any other identifying mark other than the number assigned to him on his written report will be excluded from the contest.

10. Each contestant shall devote his time strictly to the judging of the stock and shall not refer to textbooks or other data; neither shall he converse with any other persons on any class of stock being passed upon or to be passed upon.

11. The length of time allotted to each ring shall be at the discretion of the person in charge. In grading, 60% shall be allotted to placing, and 40% to reasons.

12. The contest shall be under the supervision of a representative of the Ohio State University.

The Association holding the contest shall delegate one of its numbers to assist the instructor in charge and to arrange for the securing and getting out of animals for the different classes.



Marion Imes, now Inspector in Charge, Bureau of Animal Industry, U. S. Department of Agriculture, Wichita, Kansas, was graduated from Ohio State University in 1899 and given the degree of D. V. M. in 1901. He also received the degree of Master of Science from the agricultural college of New Hampshire in 1900.

After leaving Ohio State in 1901 he was employed as manager of a large breeding farm near Dover, N. H. He remained here about a year before going to the Agricultural Experiment Station of New Hampshire where he was placed in charge of the dairy division. During the tim there he taught veterinary medicine to the students of the agricultural college. Later he entered the employ of the U. S. Bureau of Animal Industry as an inspector and was assigned to duty at Chicago remaining there until the fall of 1902. Foot-and-mouth disease broke out among the livestock in the New England states at this time and he was assigned to duty in connection with its eradication. After the work was finished he was transferred to Kansas City and went on Texas Fever work in the field.

He remained in field work in the southwest until the fall of 1906 when he was placed in charge of similar work in Arizona and New Mexico holding that position until the summer of 1914 when he was transferred to Washington, D. C. About the middle of October the foot-and-mouth disease broke out in Michigan and Ohio. Mr. Imes was assigned to the eradication of the disease in the Ohio field working in co-operation with Dr. Paul Fisher, State Veterinarian. During the latter part of January the foot-and-mouth disease broke out in Kansas and early in February he was assigned to take care of the campaign against its eradication.

Perry Van Ewing, '12, is animal husbandman at the Georgia Experiment Station. Three bulletins "Dehorning of Cattle," "Silos and Silage," and "Digestion and Metabolism of a Steer When Placed Under a Continuous Ration of Corn Silage" have been prepared and published by him within the last year.

L. L. Heller, '12, has charge of the government experimental sheep ranches in the range county of the Rocky Mountains. Formerly this work was done in connection with the different experiment stations of the western states but now is in charge of the U. S. Department of Agriculture.

S. R. Guard, '12, associate editor of The Breeder's Gazette, has been engaged in teaching animal husbandry in the Chicago Veterinary College during the winter months. He has been doing this work aside from his regular editorial duties.

W. E. Dolle, '12, is taking graduate work at Ohio State; in addition he teaches agriculture in the high school at Westerville, Ohio.

Donald Acklin, '08, living at Perrysburg, Ohio, announces the arrival of twin boys.

M. C. Ebright, '11, a breeder of fancy Berkshires, lives near Shreve, Ohio.

Porter Elliot, '07, is managing the Elliot homestead at West Mansfield, Ohio. In addition he is employed by the extension department in extension schools and fertilizer demonstration work.

A. F. Huber, '15, who finished his required work during the first semester, is farming his home farm near DeGraff, Ohio.

Harry O. Stout, '15, who finished his required work at the end of the first semester, is teaching in the high school at Middletown, Ohio.

F. E. Perry, '14-'15, is farming the home farm at Leipsic, Ohio. Mr. Perry and Earl Chenault, '15, finished the soil survey on the New Prison Farm at London in January. Both chemical and physical analyses of the soil were made.

H. F. Ehlerding, '14, is farming near Cincinnati, Ohio.

M. D. Moore, '09, has accepted the position of farm manager of the L. D. Drewery Farm at Milford, Ohio.

R. M. Kelly, '14, and K. W. McDowell, '14, are operating an orchard near Circleville, Ohio.

J. C. Heckler, '15, who finished his required work the first semester, has accepted a position with the John Wildi Condensery Co., at Marysville, Ohio.

C. V. Plank, two-year course '14, was married to Miss Eula Foss of Ashland, Ohio, on February 25. They will live on the Plank farm near Ashland.

G. C. Woodin, '13, is in the landscape gardening department of the Michigan Agricultural College, Lansing, Mich.

W. W. Brownfield, '12, who is farming at Uniontown, Pa., announces the birth of a new son on March 14.

W. M. McGarey, two-year course '14, is the manager of a farm at Junction City, Ohio.

Geo. Worman, '12, an eastern agent for Swift & Co., is now located in New Jersey.

Walter McCoy, '12, is a county agent in Indiana.

John Wuichet, '08, a breeder of Hamshire hogs near Dayton, Ohio, has been engaged to coach in boys' county judging contests which will be held during the coming fall.

Ralph A. Knight, '11, has charge of the vegetable gardening work on the Sawyer Farms at Marion, Ohio.

R. B. Hughes, '12, has charge of a large orchard at Findlay, Ohio.

V. B. Ditrick, '14, is managing a 400 acre farm near Orient, Ohio.

In the merry month of June,
When the roses are in bloom,
Cupid, wedding inks, will forge
For our old friend, Clayton George, ('12).
And the (Miss Grace) Apple ('12) of his eye
Will be Mrs. George bye-and-bye.
To California, a trip they'll make,
Just for a honey-moon to take,
At their new home in Purdue,
We wish them blessings—quite a few.

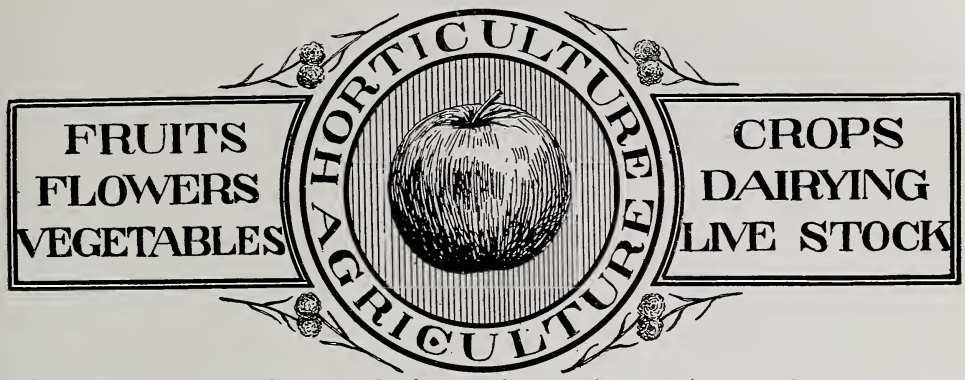
—Selected.

THE GOLDEN YEAR.

But we grow old. Ah! when shall all men's good
Be each m n's rule, and universal peace
Lie like a shaft of light across the land,
And like a lane of beams athwart the sea,
Thro' all the circle of the golden year?

—Tennyson.

A SHORTHORN HERD AT PASTURE. —Courtesy "The Field Illustrated."



Arrangements have been made for a five-year combination arts-agricultural course with the Bluffton College at Bluffton, Ohio. Other colleges with which such arrangements have already been made are Antioch, Ashland, Akron, Baldwin-Wallace, Cedarville, Wilmington and Capital University. The same plans are also practically completed with Muskingum College and the faculties of several other colleges have such a course under consideration.

In entering this course, the student spends the first three years in his home college and the last two years at Ohio State University. At the end of the first year at the agricultural college the credits will be transferred to the first college attended and the student will receive an arts degree. At the end of the second year at Ohio State the student will receive the degree of Bachelor of Science in Agriculture. This will enable the student to be graduated from two institutions and receive two degrees in five years.

As a closing event for the three-year-agricultural course, a banquet was held in the Ohio Union Friday evening, March 19. I. E. Herrod, president of the Agricultural Society of the three-year students, acted as toastmaster and Dean H. C. Price, of the College of Agriculture, J. C. Coffey and T. C. Stone of the animal husbandry department, responded to toasts in behalf of the faculty. It is planned to make this banquet an annual affair at the close of each year's work.

"This has been a very successful course," said Dean H. C. Price, "and a high standard has been set by this class. I predict that 250 students will start in the course next year and that will mean an enrollment of 500 students when the course is fully started. This year 156 students were enrolled."

The three-year course is a new venture in the line of agricultural education and Ohio State University is the first to try it. Minnesota and Nebraska have courses intended to fill the same need, but they are more of a high school nature. Next fall the free scholarships will go into effect and they will bring a number of extra students to the University. The scholarships are given by the agricultural commission as county prizes in the corn, apple, and potato growing contests.

More than 70 students, including men in the eight-weeks, three-year and four-year agricultural courses, took the examination for the advanced registry work in cow-testing which was held in Townshend Hall Saturday, March 20.

Each applicant was required to make a two-day test with the cows furnished by the animal husbandry department

before a favorable report was sent to the civil service commission of the state. All papers and tests were approved by the dairy department before any recommendations were made.

Prof. F. S. Jacoby of the poultry department will have charge of Ohio's Exhibit at the Universal Poultry Show which will be held from November 18th to 28th inclusive at the Panama-Pacific International Exposition. A special building has been reserved for the show and provisions are being made to care for 10,000 birds.

According to the plans formulated by the Ohio Agricultural Commission, any breeder residing in Ohio is priviliged to send fowls to Columbus between October 25th and November 6th to enter into competition for the Ohio exhibit. The rules of the Universal Show provide that each exhibitor will be permitted to enter and present for award not to exceed four entries in any single competition. A committee of three licensed judges selected by the Commission will select, according to the rules of the American Poultry Association, the fowls which in their judgment should be exhibited at the Exposition. Provision has been made for two cars with a ccmpetent man in charge of each to be sent after November 6th.

About 1000 baby chicks have been hatched by the incubators which are entirely in charge of the students who are taking poultry husbandry this semester. Nearly this number will be kept to fill the laying season with pullets this autumn.

That the "Ags" have been especially active in athletics during the winter is shown by the fact that first honors in the intramural festival and intramural basketball pennant went to "the back to nature crowd." In the intramural festival E. T. Davies, junior, won the high jump; H. B. Bair, freshman, won the wrestling bout; and Clarks, Duddy, Olt, Robinson, Barnes, Elliot, Saunderson, Smith and Rankin captured the honors in the inter-college relay.

In the basketball race Wiegand, Sturgeon, McClure, Roberts, Curtis and Carran did the tossing work. This is the second consecutive championship that has been taken by the Ags.

Realizing the need for more experimental work in connection with the college of agriculture, a bill was recently introduced into the legislature providing for the establishment of a branch of the Ohio Experiment Station on the University Farm. According to the wording of the bill Dean H. C. Price will be associate director of the branch station which will be devoted to experiments especially intended for use with courses given by the different departments. No new positions will be created, nor any raise in salary given to the heads of any of the departments who may have charge of a part or all of the station. The experiments will be along investigational lines and will in no wise duplicate any of the experiments which have been carried on at the station at Wooster. The expense of the branch station will be met entirely by funds from the budget of the university. It is probable that the new station, if passed favorably on by the legislature will be established on a section of the farm west of the Olentangy River.

Three new counties, Lucas, Sandusky and Highland have voted favorably on the establishment of county agricul-

turists and have applied to the college to fill these positions. Several other counties will vote on the proposition this spring, since the Agricultural Commission made a ruling whereby a county may have an agriculturist even if the county does not provide for a county experiment farm.

Mammoth graphic representations showing the wonderful cows which Ohio produces are in the process of construction for exhibition at the Panama-Pacific International Exposition. One will be a life-sized graphic picture of Murne Cowan, the champion Guernsey cow of the world; another, showing that ten of Ohio's cows produce as much butter as 101 average cows of the United States; the third will give the labor consideration showing one man by taking care of five cows properly can produce as much milk and butter as one man with 22 cows under ordinary conditions. Other features of representation will show the comparison of incomes with good and poor dairy facilities; also the results which many of the cow testing associations are accomplishing.

Exhibit's of Ohio's butter and cheese will be prepared and sent during next September just before the dairy exhibit is opened. L. P. Bailey, of Tacoma, will have charge of the exhibit for Ohio.

Although hindered considerably by the foot-and-mouth disease, the work of the advanced registry has been steadily increasing—so far at different times, over 2200 cows have been tested—118 men being employed to do the work. In the yearly tests 687 cows are entered.

New cow testing associations were recently organized at Salem, Leetonia and Barnesville and special dairy meetings have been scheduled at Newark, Mt. Vernon, Belleville, Fredericksburg and Lexington with the cow testing organization in view.

Prof. L. E. Thatcher, formerly of the Ohio Agricultural Experiment Station, has been secured by the agronomy department to do special research work in field crops laying special emphasis on improvement and cultural methods. A field crops garden containing about six acres has been laid out on the south side of the university farm. It is the purpose of the department to make this an experimental laboratory for field crops and also to use it in the preparation of material for class room demonstration.

Prof. George Livingston, acting head of the agronomy department, has been given the rank of associate in the agronomy department of the Ohio Agricultural Experiment Station at Wooster. Any experimental work which may be done on the university farm in field crops work will be published in bulletin form from the experiment station.

The value of the 1914 corn crop is equal to one-half of the gold and twice the value of all the silver ever produced in the United States, according to a recent estimation of the U. S. Geological Survey. The total value of all the farm products for 1914 is given as more than one-half the value of all the gold and silver ever produced in this country.

Concrete construction and drainage work are new features of demonstration and extension service which the department of agricultural engineering will offer to the farmers of Ohio during the coming summer and autumn. There are now requests coming to this department for demonstrations in the building of septic tanks, floors for dairy barns and other features of concrete construction to such a degree that the department will soon employ several persons to take charge of these demonstrations.

According to the plan of the department, the demonstrator will be sent to the farmer's home where he will superintend the construction of the work without cost to the farmer but on condition that the farmer will call all his neighbors to his home for one-half day so that they may witness and become familiar with latest and best ideas in concrete construction. The same plan will be followed out in drainage demonstrations, the farmers of the local community being invited during the laying of the tile which is followed by a lecture on drainage giving some of the features which should be observed in draining soils.

Stock plans of barns, dairy barns, sheep barns, hog houses, poultry houses and various other buildings for the farm, prepared by the department are now available to the farmers and stockmen of the state. These plans represent the latest ideas in farm building for the farm and can be secured free of charge.

The department will also offer suggestions as to the size and kind of buildings to construct after they learn the style of farming practiced, the topography of the land and general requirements. If extensive plans and blue prints are desired they are furnished at cost. Plans of houses are also being made although these are generally drawn after the builder sends size and desired features. Stock plans of houses can hardly be adapted to every condition. Some of this work will be used as regular subject matter in class routine for the students who are specializing in farm architecture. Many of the plans will be worked out by them with the aid of the instructor in charge. This will offer a variety of subjects and at the same time acquaint the students with the practical building conditions over the state.

Remember the dates of April 23 and May 15. The former is the date of the annual meeting of the students, faculty and alumni of the college of agriculture for a banquet at the Ohio Union. The latter is the date of the Annual Ohio State Horse Show which will be held under the auspices of the Saddle and Sirloin Club in the natural arena on the campus.

Coming mostly from southern Ohio, numerous samples of limestone are being analyzed by the Department of Agricultural Chemistry. It has been found that the value of limestones vary somewhat with their location and that some contain more magnesium carbonate than others; hence the practicability of knowing the exact value of the material used. Especially is this desired in those sections of the state where farmers are buying the lime pulvers and grinding their own stone. Most of the samples come from those sections where soil fertility demonstrations were held during the past year.